ALAMEDA COUNTY
CONGESTION MANAGEMENT AGENCY

1333 BROADWAY, SUITE 220 • OAKLAND, CA 94612 • PHONE: (510) 836-2560 • FAX: (510) 836-2185
E-MAIL: mail@accma.ca.gov • WEB SITE: accma.ca.gov

Central Alameda County Freeway System Operational Analysis
Technical Advisory Committee Meeting
Meeting Agenda

Wednesday, August 29, 2007
2:30 p.m.
City of San Leandro
Sister Cities Gallery
835 E. 14th Street
San Leandro, CA 94577

1.	**Introductions and Sign-In**		**2:30 p.m.**
2.	**Notes from the 07/25/07 TAC Meetings***	**Action**	**2:35 p.m.**

The notes from the 7/25/07 meetings are attached.

3.	**LATIP Submittal Formats***	**Information**	**2:40 p.m.**

Two versions of the LATIP will be submitted to CTC: (1) the Financially Unconstrained LATIP in October 2007 and (2) the Prioritized LATIP in January 2008. The attached summarizes the formats for each of the submittals. A draft transmittal memo and a revised Technical Memorandum 8.2, which contains the project descriptions, conceptual sketches, and cost estimates, will be distributed to the TAC at the meeting or as soon as they are available. Technical Memorandum 8.2 has already been reviewed and accepted by the TAC. It has been modified to place the project descriptions, cost estimates and sketches in the context of the Financially Unconstrained LATIP, to make the project descriptions more clear, and to renumber the projects in consecutive order. A modification was made to the project description for Project E - I-880/Industrial Parkway West Interchange- to respond to a Board member's request. A widened southbound off-ramp was added to the project description as well as three lanes (two left turn lanes plus one right turn lane) and signalization at foot of the ramp at Industrial Parkway.

4.	**Measures of Effectiveness: Preliminary Results and Presentation of Data****	**Information**	**2:50 p.m.**

The consultant team will present and review a draft memorandum (handout) summarizing the preliminary evaluation of the alternative packages using the travel demand model. The consultant team will present preliminary results (handouts) of the evaluation of the alternative packges using the Paramics model. The TAC is requested to provide feedback on the information discussed.

5. Environmental Review for the Five Alternative Packages* **Information** **3:50 p.m.**

The consultant team had identified potential environmental consequences associated with the five alternative packages. They are presented in the attached Technical Memorandum. The TAC is requested to provide comment on the information provided. It will be to aid in the project prioritization process.

6. Other Business

7. Next Meeting **September 26, 2007**

The next meeting will be in the City of Hayward at 2:30 p.m.

*Attachments enclosed
**Materials will be available at the meeting.

PLEASE DO NOT WEAR SCENTED PRODUCTS SO INDIVIDUALS WITH ENVIRONMENTAL SENSITIVITIES MAY ATTEND.

Central Alameda County Freeway System Operational Analysis
Technical Advisory Committee Meeting
Meeting Notes

Wednesday, July 25, 2007
2:30 p.m.
City of Hayward
Hayward City Hall
777 B Street, Room 2A
Hayward, CA

Agenda Item 1. Introductions and Sign-in: See attached sign-in sheet for attendance. Beth Walukas of ACCMA informed the group that the Financially Unconstrained LATIP project list has been approved by all jurisdictions and will be presented to the CMA and ACTA Boards.

Agenda Item 2. Notes from 06/07/07 TAC Meeting and 06/27/07 TAC Meeting: 06/07/07 Notes: Bob Bauman of Hayward indicated his point in Agenda Item 3, second bullet, regarding LATIP should read "the first list to CTC would be for information only." Bob also noted there were missing words in the notes for Agenda Item 4, second bullet: "the ward to change the Legislation in time" should be "Hayward to get the Legislation changed in time."

06/2707 Notes: No comments.

Agenda Item 3. Microsimulation Model: Future Conditions: Beth introduced the item and described some of the issues raised by Steve Hague of Caltrans Headquarters with respect to adjusting the free flow speed in the microsimulation model better simulate 2005 conditions. Beth noted a meeting was being secheduled with District 4 staff and Steve Hague. Beth then asked Mike Aronson of Dowling Associates to provide an overview of the microsimulation paper.

Mike noted that the four Baseline projects on the freeway were included in the 2015 "no-project" evaluation, and arterial-only projects were not coded. He also noted that speeds shown in the memorandum represent averages over all lanes.

Roxy noted her understanding that ramp metering will be included on the Northbound I-238 to Northbound I-880 connector. Paul agreed to confirm ramp meter locations for the I-238 widening project. .

Jim asked why there is a greater (speed reduction) impact on the movement from I-238 Northbound to Southbound I-880 than on the movement from Northbound I-238 to Northbound I-880. Allen Huang of Dowling Associates stated that the I-238 project will expand capacity on the Northbound I-238 to Southbound I-880 connection, which in turn allows more vehicles to enter that segment and therefore increases congestion, resulting in slower speeds.

Peter pointed out that the 2005 simulated speed for northbound and southbound directions appeared to be identical in both peak hours. Mike agreed to review and revise.

Jim asked whether subsequent analysis would address 2030 conditions. Mike concluded this item by noting that the intent is to develop 2030 MOEs where possible.

Agenda Item 4. Measures of Effectiveness: Preliminary Results and Presentation of Data: Beth introduced this item and indicated she had hoped there would be some data to show the TAC. However, she noted there have been some challenges with the model that the Consultant team has been working to resolve. She asked Mike to provide some additional comments. Mike presented a graphic showing the location of all improvement projects and indicated that work was underway to code and run the macro model to develop MOEs.

Beth inquired about how we are estimating the benefits of ITS related improvements. Paul responded that the benefits of ITS type improvements are less straightforward to quantify than for geometric improvements and indicated that the consultant team is working on ways to estimate benefits. Discussion followed about how ramp meters are handled in the macrosimulation model, particularly existing and future ramp meter rates.

Anush described performance measures that have been developed to measure ITS benefits, such as speed and accident reduction. The ITS improvements would be expected to include adaptive ramp metering and Integrated Corridor Mobility (ICM) components. Paul noted that qualitative benefits can be estimated and more quantifiable results developed as part of the systems engineering implementation at a later time. There was some discussion about the MTC I-880 ICM project, which is developing and evaluating a variety of system management strategies that includes part of the Central Freeway study area. Roxy Carmichael-Hart noted that there needs to be coordination between these two efforts.

Bob commented that a Council member had inquired about the I-580/Redwood Road improvements: is the project fully funded? Discussion followed about whether or not this improvement should continue to be included in the list of improvements. Jim Ogren of ACTA stated that this project should be retained with its full construction cost. The group concurred the project should be retained.

Beth noted that she provided comments to the Task 8.2 technical memorandum which reflect the revised project lettering system and editorial changes to make the document more readable by a non-technical audience. There was some discussion about subdividing Project C (formerly project F) into two line items. Paul commented that this has been done. Bob requested 10 copies of the revised Task 8.2 technical memo, and some additional copies will be needed for the task force.

Beth described some recent developments with respect to some Baseline projects. The I-238 widening project will incorporate auxiliary lanes on I-880. Also, the Baseline project at Marina Boulevard is expected to widen the overcrossing to provide sufficient width for six lanes. However, the bridge will be striped to accommodate only two lanes in each direction, with Project L restriping the bridge to provide six lanes in addition to ramp improvements.

Anush Nejad of Kimley-Horn reviewed the evaluation procedure outlined in Kimley-Horn's February 22, 2007 memorandum. As discussed in this memo, there is a two-step process for estimating quantitative MOEs. The first step is the macrosimulation model, with the Paramics microsimulation model being used as needed if additional analysis is warranted. As discussed in the memo, it is recommended not to use Paramics in cases where there is a preponderance of v/c ratios over 1.0.

Agenda Item 5. LATIP Submittal Formats: Beth discussed the LATIP and Programmatic PSR by reiterating the information in the Agenda.

Agenda Item 6. Other Business: Beth provided the following schedule summary:

- August 29 TAC meeting: preliminary evaluation of packages and discussion of individual projects and priorities; risk management (i.e. what if we don't deliver LATIP on time?);
- September 26 TAC meeting: draft report with prioritized list of projects;
- October 24 may be a joint PAC/TAC meeting;
- Beth is working to schedule PAC meetings for the next six months.

Agenda Item 7. Next Meeting: The next meeting will be in San Leandro on August 29 (the fifth Wednesday of the month rather than the standing recurrence of the fourth Wednesday).

ALAMEDA COUNTY
CONGESTION MANAGEMENT AGENCY

1333 BROADWAY, SUITE 220 • OAKLAND, CA 94612 • PHONE: (510) 836-2560 • FAX: (510) 836-2185
E-MAIL: mail@accma.ca.gov • WEB SITE: accma.ca.gov

CENTRAL ALAMEDA COUNTY FREEWAY SYSTEM OPERATIONAL ANALYSIS
TECHNICAL ADVISORY COMMITTEE
ROSTER OF ATTENDANCE
JULY 25, 2007
HAYWARD CITY HALL, ROOM 2A
777 "B" STREET
HAYWARD, CALIFORNIA

	NAME	JURISDICTION/ ORGANIZATION	PHONE #	E-MAIL
1.	Mike Aronson	Dowling Assoc.	(510)839-1742x119	maronson@dowlinginc.com
2.	Allen Huang	Dowling Assoc.	(510)839-1742x123	ahuang@dowling.com
3.	Keith R. Cooke	San Leandro	510-577-3439	kcooke@ci.san-leandro.ca.us
4.	Reh-Lin Chen	" "	510-577-3438	rchen@ci.san-leandro.ca.us
5.	Jim Ogan	ACTA Support	510-267-6108	jogan@actia2022.com
6.	Cheryl Chi	Caltrans-Planning	510-286-5679	cchi@dot.ca.gov
7.	Peter Lau	CT-Hwy Ops	510-286-6157	plau@dot.ca.gov
8.	Bob Bowman	CCH-PW DIR	510-583-4710	robert.bowman@hayward-ca.gov
9.	Rory Hart	CCH-T/D Acting Mgr	510-583-4761	rory.carmichael-hart@ "
10.	Morad Fakhra	COH	583-4740	MORAD.FAKHRAI@HAYWARD-CA.GOV
11.	Scott Barker	KHA	619-744-0108	scott.barker@kimley-horn.com
12.	Anush Najd	"	510-625-0712	anush.najd@kimley-horn.com
13.	Paul Krupka	"	" " "	paul.krupka@kimley-horn.com
14.	Beth Walukas	CMA		bwalukas@accma.ca.gov
15.				
16.				
17.				
18				
19.				
20.				
21.				
22.				

LATIP Submittal Formats

Financially Unconstrained LATIP submittal (October 2007):

1. Transmittal memo
   -(submitters listed in the following order: City of Hayward, Alameda County, City of San Leandro, ACTA, CMA, Caltrans (if appropriate))
2. Executive Summary with total cost by project and project location map and brief project descriptions
3. Book of Project Descriptions, Cost Estimates, Sketches, detailed cost estimates
4. Resolutions from Hayward, Alameda County, San Leandro, ACTA, CMA and letter of support from MTC staff

Financially Constrained Submittal (January 2008):

1. Transmittal memo
   -(submitters listed in the following order: City of Hayward, Alameda County, City of San Leandro, ACTA, CMA, Caltrans (if appropriate))
2. Executive Summary with total cost by project and project location map and brief project descriptions
3. Programmatic PSR with Project Descriptions, Cost Estimates, Sketches, detailed cost estimates, etc..
4. Resolutions from Hayward, Alameda County, San Leandro, ACTA, CMA and letter of support from MTC staff

Central Alameda County Freeway System

Financially Unconstrained LATIP Project List

A	Widen connector, NB I-238 to NB I-880
B	Washington & Lewelling IC
C	Extend I-880 HOV North to Hegenberger
D	Add I-880 aux. lanes, A St. to Winton
E	Add NB off-ramp, I-880 to Industrial
F	Add I-880 aux. lanes, Industrial to Whipple
G	Whipple IC Truck improvements
H	On-ramp modifications (locations TBD)
I	Adaptive ramp metering (corridor-wide)
J	Integrated Corridor Management (ICM)
K	I-880/Davis IC improvement
L	I-880/Marina IC improvement
M	I-880/A St. IC improvement
N	I-880/Winton IC improvement
O	SR 92/Industrial IC improvement
P	Strobridge/I-580 improvements
Q	Redwood/I-580 IC funding
R	I-880/SR 92 reliever – Clawiter/Whitesell IC
S	Reduce ramp merge/weave conflicts (locations TBD)
T	Managed lanes (locations TBD)
U	Soundwalls (locations TBD)

Kimley-Horn and Associates, Inc.

Revision date: 07-09-07

Central Alameda County Freeway System Operational Analysis

Technical Memorandum
Task 9.1 - Evaluate Five Alternative Improvement Packages, Environmental Review

Prepared for:

Alameda County Congestion Management Agency

Prepared by:

Kimley-Horn
and Associates, Inc.

August 24, 2007

This memorandum presents a review of the potential environmental consequences associated with five alternative packages of transportation improvements, and was prepared in accordance with the revised environmental scope for Task 9.1 of the Central Alameda County Freeway System Operational Analysis (the "Analysis"), which is being conducted by Kimley-Horn and Associates (KHA) for the Alameda County Congestion Management Agency (ACCMA).

Methods

Potential environmental impacts were identified for each of the improvements specifically defined in the Technical Memorandum for Task 8.2 (Develop Conceptual Sketches and Cost Estimates for Financially Unconstrained Local Alternative Transportation Improvement Program (LATIP) Projects). A constraints-level analysis was conducted for the following environmental resources:

- Land use
- Emergency services
- Traffic and transportation
- Visual/aesthetics
- Cultural resources
- Air quality
- Noise and vibration
- Community impacts:
    - Relocations
    - Environmental Justice
- Wetlands and other waters
- Sensitive species and habitats

The environmental analysis considered the following data sources:

- Aerial photography
- US Geological Survey topographic maps
- US Census Bureau socioeconomic data
- California Natural Diversity Database (CNDDB) information on sensitive plant and animal species
- On-line land use planning documents for Alameda County and the Cities of Hayward and San Leandro
- A windshield field reconnaissance to identify potential sensitive resources in the vicinity of each improvement
- Previously completed environmental documentation (including the Draft Project Study Report (PSR) for the Davis Street Overcrossing (January 2007) and the Initial Study/Environmental Assessment for the I-580/Castro Valley Interchange (June 2006))

The intensity of impact (i.e., whether or not it may be significant and whether or not mitigation measures are anticipated) within each of the resource areas described above was estimated for each of the candidate improvements. Issues were identified based on Caltrans and Federal Highway Administration (FHWA) guidelines for environmental review. The approach taken was to provide a reasonably conservative evaluation that reflected neither optimistic nor worst-case assumptions. For example, temporary construction-related impacts to traffic circulation and emergency vehicle access due to lane closures and/or bridge reconstruction were assumed to be mitigable through the implementation of a

Transportation Management Plan. Environmental analysis has already been completed for projects K and Q, as described in the seventh bullet above. The results of these analyses are presented in this technical memorandum.

The intent of this analysis was to provide a preliminary identification of likely impacts based on readily accessible data sources. It is considered likely that these initial findings will be modified following the further refinement of the improvements and the subsequent preparation of detailed technical studies.

Description of Improvements and Packages

The following paragraphs describe the proposed improvements evaluated in this memorandum. Conceptual sketches of these improvements may be found in the technical memorandum for Task 8.2. The improvements described below have been grouped into packages based on their combined function and geographic distribution, as presented in **Table 1**. As shown in this table, improvements have been allocated to one or more of five packages (i.e., Mainline Operations, Capacity Expansion, North Corridor "Leg," South Corridor "Leg,", and East Corridor "Leg").

A and B. I-880/Washington Avenue Interchange and I-238 northbound Connector to northbound I-880: The I-880/Washington Avenue Interchange Project includes reconfiguring and widening the loop on ramp from Washington Avenue to I-880 southbound, adding an on ramp from Washington Avenue to I-880 northbound, expanding the Washington/Beatrice intersection, and adding traffic signal modification and coordination. This Project would also widen the Washington Avenue bridge over I-880 to provide a six-lane cross-section, with the curb lanes providing 17 feet of pavement to facilitate Routine Accommodation of pedestrians and bicyclists. It also includes the I-238 Northbound connector project, involving widening of the connector from I-238 to I-880 northbound to provide two lanes, improvements to the off ramp from I-880 northbound to Washington Avenue, and construction of a new I-880 northbound on ramp from Washington Avenue. Right of way acquisition will be required to accommodate the northbound and southbound on ramps from Washington to I-880.

C. Extend Northbound High Occupancy Vehicle (HOV) Lanes: The intent of this project is to extend the existing northbound HOV lanes on I-880 from north of Hacienda Avenue to the northern limit of the study area. (The southbound HOV project was defined by ACCMA to support an application for Corridor Mobility Investment Account (CMIA) funding. It will extend to Marina Boulevard and involve freeway widening and lane reconfiguration within the existing right-of-way as well as interchange bridge reconstruction at Davis Street and Marina Boulevard. The southbound HOV project has been funded and is therefore assumed in the Baseline Condition).

The intent of the northbound project is to extend the existing northbound HOV lane on I-880 from its current terminus near the Hacienda Avenue overcrossing to the north limit of the Analysis, while addressing Caltrans comments regarding minimum HOV lane width (11 feet), HOV shoulder width (8 feet) and shoulder lane width (12 feet). The layout shown in the exhibit *north of Washington Avenue* would involve freeway widening and lane reconfiguration generally within the existing right-of-way. Extending the northbound HOV to the *south of Washington Avenue* would present the following engineering challenges: 1) the I-238 Widening Project will add auxiliary lanes south of the I-238/I-880 interchange and effectively "use up" available right-of-way, and 2) there is limited cross-section width on the segment between the I-238/I-880 connector ramps to accommodate HOV lanes. The layout shows the conceptual implications in this segment, including structure widening and minimum required right-of-way acquisition. It was estimated that 25 residential properties would be acquired for the south portion of

Table 1
PACKAGES OF IMPROVEMENTS
Central Alameda County Freeway System Operational Analysis

ID	Facility	Location	Proposed Project	PACKAGES				
				Mainline Operations	Capacity Expansion	North Corridor "Leg"	South Corridor "Leg"	East Corridor "Leg"
A and B	I-238	NB I-238 connector to NB I-880	Widen remaining portion of connector to two lanes to enhance traffic and truck operations.	✓				✓
	I-880	Washington Interchange & Lewelling Interchange	Reconstruct interchange connections to enhance operations and truck movements, and complement I-238 Widening Project, including widening over/under crossing.		✓	✓		
C	I-880	NB: Hacienda to North of Washington NB: North of Washington to Hegenberger	Extend HOV lanes to include entire project limits		✓	✓		
D	I-880	West A Street interchange to Winton Interchange	Add an auxiliary lane in each direction	✓		✓		
E	I-880	Industrial Parkway West Interchange	Add NB off-ramp and on-ramp and widen SB on ramp to improve mainline operations and truck movements.		✓		✓	
F	I-880	Whipple Road to Industrial Parkway West	Add auxiliary lane in each direction	✓			✓	
G	I-880 I-238 I-580	Whipple Road Interchange	Interchange improvements to enhance truck movements.		✓		✓	
H	I-880 I-238 I-580	Locations to be determined	On-ramp modifications to channel and merge traffic more effectively.	✓		✓	✓	✓
I and J	I-880 I-238 I-580	Corridor-wide	Adaptive Ramp Metering	✓		✓	✓	✓
	I-880 I-238 I-580	Corridor-wide	Integrated Corridor Mobility (ICM) Program	✓		✓	✓	✓
K	I-880	Davis St.	Reconstruct interchange and widen over/under crossing to enhance operations and truck movements.		✓	✓		
L	I-880	Marina Blvd.	Reconstruct interchange and widen over/under crossing to enhance operations and truck movements.		✓	✓		
M	I-880	W. A St.	Reconstruct interchange and widen over/under crossing to enhance operations and truck movements.		✓	✓		
N	I-880	Winton Ave.	Reconstruct interchange and widen over/under crossing to enhance operations and truck movements.		✓	✓		
O	SR 92	Industrial Blvd.	Widen westbound off-ramp from one to two lanes and restripe Industrial Parkway to receive the added lane to enhance operations.		✓	✓		
P	I-580	I-580/Strobridge Avenue/Castro Valley Boulevard	Extend I-580 Strobridge Ave off-ramp over Strobridge Ave to Castro Valley Boulevard and implement circulation improvements on Strobridge and Norbridge Avenues.	✓				✓
Q	I-580	Redwood Rd.	I-580/Redwood Road Interchange Project		✓			✓
R	Hwy 92	SR 92/Clawiter Interchange Area	I-880/SR 92 Reliever - Clawiter/ Whitesell Interchange		✓	✓		
S	I-880 I-238 I-580	Locations to be determined	Reduce ramp merge/weave conflicts	✓		✓	✓	✓
T	I-880 I-238 I-580	Locations to be determined	Managed lanes	✓		✓	✓	✓
U	I-880 I-238 I-580	Locations to be determined	Sound Walls					

the HOV project. (Note: The "existing" cross-section shown in the "south" segment assumes the I-238 Widening Project is complete.)

D. Auxiliary Lanes on I-880, Winton Avenue to Paseo Grande: This project would add auxiliary lanes in both the northbound and southbound directions between Winton Avenue and West A Street by widening the freeway and reconfiguring the lane layout. A northbound auxiliary lane was added between West A Street and Paseo Grande to effectively extend the auxiliary lane to the south limit of the northbound auxiliary lane portion of the I-238 Widening Project.

E. I-880/Industrial Parkway West Interchange: This project was defined based on the Route 84 Realignment Project, and would reconstruct the interchange into a modified partial cloverleaf layout. [1]It would add a two-lane off-ramp just north of Alameda Creek, intersecting Industrial Parkway West opposite the existing northbound on-ramp entrance. This project would also widen the southbound off ramp, which would flare out to three lanes (two left turn lanes plus one right turn lane) at Industrial Parkway. This new ramp would involve retaining walls and a bridge to clear the north-south tributary drainage creek, and signalization at the foot of ramp intersection. In addition, this project would provide an HOV bypass lane on the southbound loop on ramp, replace the existing bridge structure over I-880 and provide for the Routine Accommodation of bicyclists. Right-of-way acquisition would be required to accommodate the northbound on and off-ramps.

F. Auxiliary Lanes on I-880, Industrial Parkway West to Whipple Road: This project would add auxiliary lanes by widening the freeway and reconfiguring the lane layout to provide the minimum lane widths identified by Caltrans. This assumes the existing I-880 bridge over Alameda Creek will be widened to accommodate the new cross-section.

G. I-880/Whipple Road Interchange: This project would expand the on ramp from Whipple Road to I-880 northbound to provide two lanes, including one HOV bypass lane (which could possibly be shared to allow trucks to bypass the ramp meter). Construction of this project would require expanding the existing bridge over the Union Pacific Railroad (UPRR) and some right-of-way acquisition.

K. Davis Street Interchange: The project shown in the sketch was defined by the City of San Leandro during an ongoing Project Study Report (PSR) effort. It would involve reconstructing the I-880 bridge (including Routine Accommodation), ramp reconstruction, a new connection to the Westgate Parkway/Timothy Drive intersection adjacent to Westgate Mall, and signalization improvements.

L. Marina Boulevard Interchange: This project was defined based on a sketch developed by the City of San Leandro. It would involve restriping the I-880 bridge (including Routine Accommodation) and ramps to convert the interchange into a conventional partial cloverleaf with signalized foot-of-ramp intersections and dual left lanes. A Baseline Project at this location will widen the bridge structure to a six-lane width, but only four lanes will be striped prior to the implementation of Project L.

M. West A Street Interchange: This project was defined in concept by the City of Hayward and would involve widening A Street between the foot-of-ramp intersections. This requires reconstructing the I-880 overcrossing. Based on feedback provided by the TAC and a preliminary analysis of construction staging, it is anticipated that one additional 12-foot freeway lane in each direction will be necessary to provide sufficient width to accommodate traffic during construction; this would also provide additional lane

[1] A partial cloverleaf typically combines loop on ramps with a standard diamond ramp configuration. For Project E, a southbound diamond on ramp would not be provided due to an existing use west of I-880 and the alignment of Industrial Parkway to the west of I-880.

capacity for potential future freeway widening. Three construction stages were assumed. This project would also involve intersection and signalization modifications.

N. West Winton Avenue Interchange: This project was defined in concept by the City of Hayward and would involve reconstructing ramps to create a partial cloverleaf interchange with signalized foot-of-ramp intersections. It would also include reconfiguration of the eastbound to southbound on-ramp and a new connection to Southland Mall Drive opposite the I-880 southbound off-ramp intersection with West Winton Avenue. The cost estimating worksheets have been revised to reflect additional landscaping, which would be required following the removal of the loop on ramps from West Winton Avenue to I-880.

O. Route 92/Industrial Boulevard Interchange: Project O involves widening of the westbound to southbound loop off ramp and local street conform and striping improvements on Industrial Boulevard to accommodate the additional exiting lane from SR 92 westbound to Industrial Boulevard southbound.

P. I-580/Strobridge Off-Ramp Modification: This project was defined in concept by the City of Hayward as a part of the I-238/Mission/Foothill Project. It would construct a new westbound off-ramp extension from I-580 westbound to Castro Valley Boulevard. It would also include reconfiguration of Norbridge Avenue, which would intersect Strobridge at the location of the existing off-ramp junction. Local street and signalization improvements would be included.

Q. I-580/Redwood Road Interchange: This project was defined in detail by ACTIA as part of the I-580 Castro Valley Interchange Project. Project Q involves expansion of the I-580/Redwood Road interchange to provide a new I-580 westbound off ramp and a new I-580 eastbound off ramp at Redwood Road. The project would also provide a new off ramp from I-580 eastbound to Grove Way and local road improvements. *As discussed above, an environmental document has been previously completed for this project (i.e., the IS/EA for the I-580/Castro Valley Interchange, January 2007). This technical memorandum summarizes the findings of the IS/EA. Some interpretation was necessary in order to compare this improvement's impacts to those of other improvements.*

R. I-880/Route 92 Reliever – Clawiter/Whitesell Interchange: This project was defined in a Project Study Report (PSR) and would involve construction of a new diamond interchange at SR 92 and Whitesell Street, which would be extended to the south of the freeway to form a "T" intersection with Clawiter Road. The project would also provide a new on ramp from southbound Clawiter Road to SR 92 westbound on a bridge over the SR 92 westbound off ramp to Whitesell Street.

Improvements H (on ramp modifications to channel and merge traffic more efficiently), I and J (corridor-wide adaptive ramp metering and Integrated Corridor Mobility program), S (ramp merge and weave improvements), T (managed lanes), and U (sound walls) are not specifically defined in terms of location or conceptual design, and are therefore not evaluated in this technical memorandum.

Environmental Setting

The improvements are located in an urbanized environment, with a mixture of residential, commercial and other land uses developed in close proximity to the freeways and interchanges. Several parks, which may be considered Section 4(f)[2] resources, are located in the vicinity of the improvements; however, none of these uses is immediately adjacent to the proposed improvements. The visual environment consists of transportation infrastructure, residential, commercial, industrial and other buildings, with small areas of

[2] Publicly owned parks and recreational facilities, waterfowl and wildlife refuges, and significant historical sites as outlined in Section 4(f) of the Department of Transportation Act of 1966.

undeveloped land located near freeway on and off ramps. In general, the visual environment is not considered distinct or memorable. None of the freeway facilities are designated as a State Scenic Highway; however, I-580 east of I-238 is an Eligible State Scenic Highway.

Given the generally built-out character of surrounding land uses and the disturbed nature of undeveloped land, little, if any, suitable habitat for sensitive plant or animal species is expected to occur within the area of the proposed improvements. Potentially jurisdictional wetlands or waters of the US were identified in the vicinity of some of the improvements.

Analysis and Findings

Table 2 presents a summary of the estimated intensity of impacts by resource area for each of the improvements. The following paragraphs describe the key findings of the environmental analysis, focusing on possible significant impacts.

Land Use

As discussed above, none of the improvements are expected to have direct impacts to any potential Section 4(f) resource. The majority of the improvements are located within or adjacent to communities that have higher-than-average low income or minority populations (as compared to Alameda County overall). Improvements C, E, Q, and R would necessitate right-of-way acquisition that would result in direct land use impacts on adjacent residential and commercial uses. Improvements A&B, D, G, N, O and P are expected to have indirect impacts on existing land uses, as described below in the Traffic and Transportation, and Noise and Vibration discussions.

Emergency Services

Improvements A&B, E, K, P, Q, and R may affect emergency vehicle access due to the anticipated temporary closure of facilities during construction. Whether or not these impacts occur depends on the location of the emergency and the route taken by the responding police or fire units. The preparation of a Transportation Management Plan that accounts for emergency vehicle access will help avoid and/or minimize these impacts.

Traffic and Transportation

While each of the improvements would have a beneficial impact on traffic once constructed, permanent impacts would result from the diversion of traffic from other locations to new freeway ramps or ramp connections (i.e., improvements A&B, E, P, Q and R). Temporary closure of facilities during construction (A&B, E, K, M, N, P, Q, and R), would result in short-term impacts to traffic circulation, causing out-of-direction travel and/or delays. To the extent that temporary closures restrict access to and from local land uses, an indirect impact to existing land uses would result.

Visual/Aesthetics

Improvements that construct new structures (improvements A&B, E, L, N, P, Q, R) or expand existing ones (F, G, K, M, and O), have the potential to cause impacts to visual resources. Improvement Q is located along the segment of I-580 that is an Eligible State Scenic Highway. The IS/EA prepared for this improvement identified less-than-significant impacts to visual resources associated with the improvement. Improvement E is notable because it would construct two structures above a tributary to Alameda Creek.

Table 2
INTENSITY OF IMPACTS BY RESOURCE AND IMPROVEMENT
Central Alameda County Freeway System Operational Analysis

Resource Area	Improvement Projects													
	A & B	C	D	E	F	G	K	L	M	N	O	P	Q	R
Land Use	◔	◑	◔	◑	○	◔	○	○	○	◔	◔	◔	◑	◑
Emergency Services	◑	◔	◔	◑	◔	◔	◑	◔	◔	◔	◔	◑	◑	◑
Traffic and Transportation	◑	○	○	◑	○	○	◑	○	◑	◑	○	◑	◑	◑
Visual/Aesthetics	◑	◔	◔	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑	◑
Cultural Resources	◔	◔	◔	◔	◔	◔	◔	◔	◔	◔	◔	◔	◔	◔
Air Quality	◑	◔	◔	◑	◔	◔	◔	◔	◔	◔	◔	◑	◔	◑
Noise and Vibration	◑	◑	◑	◑	◑	◑	◔	◔	◔	◑	◑	◑	◑	◔
Relocations	◔	◕	○	◑	○	○	◔	○	○	○	○	○	◕	◕
Environmental Justice	◔	◔	◔	◑	◔	○	○	◔	◔	◔	◔	◑	○	◑
Wetlands and Other Waters	○	◔	○	◑	◑	○	○	○	○	○	○	○	◑	◔
Sensitive Species and Habitats	○	◑	○	◔	◑	○	○	○	○	○	○	◑	◑	◑

Notes:

○ Impact, if any, expected to be minimal; mitigation not necessary.

◔ Impact considered less than significant; mitigation considered unlikely.

◑ Possible significant impact; mitigation may be required.

◕ Likely significant impact; mitigation necessary.

● Possible significant unmitigable impact

However, given the general character of the visual environment as discussed above, no significant impacts warranting mitigation are anticipated.

Cultural Resources

Each of the improvements would involve ground-disturbing activities that may impact cultural resources, if any are present within the improvement's Area of Potential Effect. The environmental analyses for improvements K and Q concluded that neither improvement would result in impacts to cultural resources.

Air Quality

All of the improvements would result in short-term construction-related impacts to air quality. Once constructed, each of the improvements would be expected to result in air quality benefits, due to reductions in congestion. Operations-related impacts may result from additional traffic diverted to new freeway ramps or ramp connectors (i.e., improvements A&B, E, P, and R). The I-580/Castro Valley Interchange Project IS/EA indicated that improvement Q would result in less than significant impacts, and the Draft PSR for I-880/Davis Street indicated that air quality impacts would be less-than-significant for improvement K.

Noise and Vibration

As with air quality, all of the improvements would be likely to have some temporary noise and/or vibration impacts during construction. For improvements A&B, E, N, P, and Q, which would add new freeway ramps or ramp connections, operations-related noise impacts may result due to traffic increases associated with diversion from other locations to the new ramps. Additionally, improvements that would shift freeway or ramp traffic closer to existing sensitive receptors (C, D, F, G, and O) may also result in a permanent noise impact. To the extent that traffic noise impacts existing sensitive receptors adjacent to the improvements, noise abatement could be required.

Community Impacts: Relocations

Improvements C, E, Q, and R would necessitate right-of-way acquisition that would result in the relocation of existing businesses or residences. The southern portion of improvement C would affect approximately 25 residences. Construction of improvement E would require acquisition of a portion of the parking lot of the Bay Cities Auto Auction use, located at the southeastern corner of I-880/Industrial Parkway. Improvement Q would necessitate removal of seven residential structures, and improvement R would impact an existing business south of SR 92.

Community Impacts: Environmental Justice

Environmental justice may be an issue if impacts are disproportionately borne by minority or low income populations. The relocations associated with improvements E and R may result in environmental justice issues, based on tract-level socioeconomic data. More detailed evaluation of improvement C will be necessary to determine whether or not an environmental justice issue may result. Previous evaluation of improvement Q in the IS/EA concluded that there will be no environmental justice issues. In addition to relocations, environmental justice issues may result from localized traffic, site access and noise impacts within communities with higher-than-average low-income or minority populations.

Wetlands and Other Waters

Based on the field reconnaissance, analysis of maps and review of previous environmental analyses, improvements E, F and Q have the potential to impact potentially jurisdictional wetlands and/or waters of the US. Improvement E is expected to span the Alameda Creek tributary adjacent to I-880, while improvement F is expected to span Alameda Creek itself. According to the I-580/Castro Valley Interchange IS/EA, improvement Q's impact to jurisdictional areas is significant, but mitigable.

Sensitive Species and Habitats

The majority of improvements would be constructed within existing disturbed areas, and are not expected to provide suitable habitat for sensitive species. Improvements C, F, P, Q, and R may impact habitat that could potentially support sensitive species, such as the Alameda whipsnake. Improvement F is notable, because it may directly and indirectly affect the adjacent Northern Coastal Salt Marsh, a sensitive natural community.

Evaluation of Improvement Packages

The intensity of impact for each of the five improvement packages is presented in **Table 3**. The approach taken was to select the most intense impact by resource area from the various improvements comprising a given package. For example, the Capacity Expansion package includes improvements A&B, C, E, G, K, L, M, N, O, Q and R. As shown in previously referenced Table 2, improvements C and R are expected to have more intense potential relocation impacts than the other improvements in this package; accordingly, the intensity of impacts to this resource associated with improvements C and R is reported in Table 3.

As shown in Table 3, all five improvement packages would be expected to result in possible significant impacts to the majority of resources evaluated. Because each of the improvements shown in Table 2 show possible significant impacts in one or more resources, any shuffling of improvements between packages would still result in possible significant impacts in a minimum of one resource. The Capacity Expansion, North Corridor "Leg," and East Corridor "Leg" packages would be expected to result in likely significant impacts to one or more resource areas. This is due to the inclusion of improvements C, Q, and R, which are expected to include the most intense impacts among the improvements evaluated.

Fatal Flaws and Impact Avoidance

Based on the improvement concepts and analysis summarized in this technical memorandum, none of the improvements is expected to result in significant, unmitigable impacts, and only three of the improvements are expected to have significant impacts necessitating mitigation. Potential construction-related impacts to emergency services and traffic and transportation (along with associated indirect impacts to land use and environmental justice issues) due to temporary facility closures would be minimized through implementation of a Transportation Management Plan. Potential impacts to visual/aesthetics resulting from new or expanded structures would be reduced through implementation of a Landscape Concept Plan (where appropriate) and the incorporation of appropriate aesthetic treatments into the design of the improvements. Noise abatement measures, such as sound walls, may be necessary where an improvement results in an acoustical impact to noise-sensitive receptors. Given these considerations, none of the packages appear to have any fatal flaws with respect to the resources evaluated in this technical memorandum.

Next Steps

Table 3
INTENSITY OF IMPACTS BY RESOURCE AND PACKAGE
Central Alameda County Freeway System Operational Analysis

Resource Area	Improvement Packages				
	Mainline Operations	**Capacity Expansion**	**North Corridor "Leg"**	**South Corridor "Leg"**	**East Corridor "Leg"**
Land Use	◔	◑	◑	◑	◑
Emergency Services	◑	◑	◑	◑	◑
Traffic and Transportation	◑	◑	◑	◑	◑
Visual/Aesthetics	◑	◑	◑	◑	◑
Cultural Resources	◔	◔	◔	◔	◔
Air Quality	◑	◑	◑	◑	◑
Noise and Vibration	◑	◑	◑	◑	◑
Relocations	◔	◕	◕	◑	◕
Environmental Justice	◑	◑	◑	◑	◑
Wetlands and Other Waters	◑	◑	◔	◑	◑
Sensitive Species and Habitats	◑	◑	◑	◑	◑

Notes:

○ Impact, if any, expected to be minimal; mitigation not necessary.

◔ Impact considered less than significant; mitigation considered unlikely.

◑ Possible significant impact; mitigation may be required.

◕ Likely significant impact; mitigation necessary.

● Possible significant unmitigable impact

Subsequent activities to be carried out under Task 9.1 include the evaluation of each of the improvements identified in Table 1 with respect to their relative performance against a set of qualitative and quantitative Measures of Effectiveness (MOE). This assessment will lead to a prioritized list of improvements to be carried forward as the Local Alternative Transportation Improvement Program (LATIP), which will be documented in a Programmatic PSR. A Preliminary Environmental Analysis Report (PEAR) will be an attachment to the Programmatic PSR, and will summarize the key findings of this technical memorandum for the set of improvements to be carried forward. The PEAR will also identify the suggested Environmental Document for compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

Because each of the improvements involves impacts considered possibly significant, a Categorical Exemption/Categorical Exclusion processing approach is not considered likely for any of the improvements. Because none of the improvements are expected to result in significant, unmitigable impacts, it is considered unlikely that an Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) would be necessary. Given these considerations, any alternative grouping of the improvements described in this technical memorandum is expected to be processed as an IS/EA. This conclusion is supported by the fact that improvement Q, which involves construction of new freeway ramps, relocation of residences, and impacts to jurisdictional waters of the US, was processed as an IS/EA.

It is expected that each of the improvements would necessitate preparation of the following technical reports or studies:

- Traffic analysis
- Visual impact analysis
- Water quality analysis
- Floodplain evaluation
- Noise study
- Air quality study
- Cultural resources analyses
- Initial Site Assessment
- Aerially Deposited Lead study
- Natural Environment Study (a Natural Environment Study – Minimal Impacts may be prepared for improvements A&B, D, G, K , L, M, N, and O)

Improvements C, E, and R would be expected to require the preparation of a community impact study.

Improvements E and F are expected to require the preparation of Clean Water Act (CWA) Section 404 and 401 permits, and Fish and Game Code Section 1602 permits. These permits may also be required for other improvements if they impact jurisdictional wetlands or waters of the US.

Each improvement would also necessitate preparation of Caltrans encroachment permits and temporary construction easements. Because improvement G would traverse a UPRR line, it may also require an encroachment permit to accommodate the widening of this rail crossing.